

Fig. 1

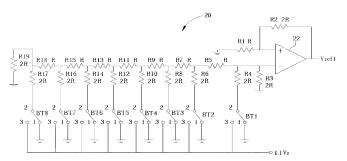


Fig. 2

| Button pressed | Associated voltage |
|----------------|--------------------|
| BTI | 1.1Vr |
| BT2 | 1/2 x 1.1Vr |
| ВТ3 | 1/4 x 1.1 Vr |
| BT4 | 1/8 x 1.1 Vr |
| ВТ5 | 1/16 x 1.1Vr |
| ВТ6 | 1/32 x 1.1 Vr |
| ВТ7 | 1/64 x 1.1 Vr |
| ВТ8 | 1/128 x 1.1Vr |

Fig. 3

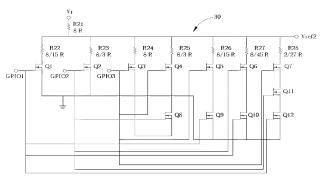


Fig. 4

| Button tested | GPIOI | GPIO2 | GPIO3 | GPIO0 | Vref2 ∨alue |
|---------------|-------|-------|-------|-------|-------------|
| ВТІ | 0 | 0 | 0 | 1 | Vr |
| BT2 | 0 | 0 | 1 | 1 | 1/2 x Vr |
| ВТ3 | 0 | 1 | 0 | 1 | 1/4 x Vr |
| BT4 | 0 | 1 | 1 | 1 | 1/8 x Vr |
| BT5 | 1 | 0 | 0 | 1 | 1/16 x Vr |
| ВТ6 | 1 | 0 | 1 | 1 | 1/32 x Vr |
| BT7 | 1 | 1 | 0 | 1 | 1/64 x Vr |
| BT8 | 1 | 1 | 1 | 1 | 1/128 x Vr |

Fig. 5

| Row Num | BTI | BT2 | BT3 | BT4 | BT5 | BT6 | BT7 | BT8 | Detected button |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | BT1 |
| 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | BT2 |
| 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | ВТЗ |
| 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | BT4 |
| 5 | 0 | 0 | 0 | 0 | - 1 | 0 | 0 | 0 | BT5 |
| 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | BT6 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | BT7 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | BT8 |
| 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | BT1 |
| 10 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | BTI |
| 11 | : | : | : | : | : | : | : | : | : |
| 12 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | BTI |
| 13 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | BT1 |
| 14 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | BT1 |
| 15 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | BT1 |
| 16 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | BT1 |
| 17 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | BT1 |
| 18 | : | : | : | : | : | : | : | : | : |
| 19 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | BTi |
| 20 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | BT2 |

Fig. 6